

§58.16-16 Reducing regulators.

(a) All systems shall be provided with a regulating device so adjusted as to release gas to the distribution tubing at a pressure not in excess of 18 inches water column, or approximately 10.5 ounces per square inch.

(b) The low pressure side of all regulators shall be protected against excessive pressure by means of a suitable relief valve which shall be integral with the regulator. The relief valve shall be set to start to discharge at a pressure not less than two times and not more than three times the delivery pressure.

(c) All reducing regulators shall be fitted with a pressure gage located on the high pressure side of the regulator.

§58.16-17 Piping and fittings.

(a) The piping between the cylinders and the appliances shall be seamless annealed copper tubing or such other seamless tubing as may be approved by the Commandant.

(b) All high pressure tubing between the cylinders and the regulators shall have a minimum wall thickness of 0.049 inch. All low-pressure tubing between the regulator and appliances shall have a minimum wall thickness of 0.032 inch.

(c) Tubing connecting fittings shall be of the flare type; or connections may be soldered or brazed with material having a melting point in excess of 1,000 °F.

§58.16-18 Installation.

(a) *Cylinders, regulating and safety equipment.* (1) Cylinders, regulating and safety equipment shall be installed in a substantially constructed and firmly fixed metal enclosure located on or above the weather deck. The cylinder enclosure shall have access from the weather deck only. The enclosure shall be provided with top and bottom ventilation consisting of a fresh air inlet pipe and an exhaust pipe both entering through the top of the cylinder housing. The enclosure shall be constructed so that when the access opening is closed, no gas can escape except through the ventilation system.

(2) Cylinders, regulating and safety devices shall be securely fastened and supported within the metal enclosure. The cylinders and high pressure equip-

ment shall be so mounted as to be readily accessible and capable of easy removal for refilling and inspection. The stowage of high pressure equipment in the housing shall be such that the cylinder valves can be readily operated and the pressure gage dial be easily visible. Where possible cylinders shall be mounted in an upright position.

(3) Stowage of unconnected spare cylinders, filled or empty, shall comply with the requirements for cylinders.

(4) All valves, manifolds and regulators shall be securely mounted in locations readily accessible for inspection, maintenance and testing, and shall be adequately protected.

(5) Discharge of the safety relief valves shall be vented away from the cylinder, and insofar as practicable, upward into the open atmosphere, but in all cases so as to prevent impingement of the escaping gas onto a cylinder.

(b) *Piping.* (1) All piping shall be installed so as to provide minimum interior runs and adequate flexibility. The piping at the cylinder outlets shall be fitted with flexible metallic connections to minimize the effect of cylinder movement on the outlet piping.

(2) Distribution lines shall be protected from physical damage and be readily accessible for inspection. Lines shall be substantially secured against vibration by means of soft nonferrous metal clips without sharp edges in contact with the tubing. When passing through decks or bulkheads, the lines shall be protected by ferrules of non-abrasive material. The distribution lines shall be continuous length of tubes from the regulator to the shutoff valve at the appliance manifold.

(c) *Gas-consuming appliances.* All gas-consuming appliances shall be permanently and securely fastened in place.

(d) *Electrical.* No electrical connections shall be made within the cylinder housing.

§58.16-19 Tests.

(a) *Installation.* (1) After installation, the distribution tubing shall be tested prior to its connection to the regulator and appliance by an air pressure of not less than 5 pounds per square inch.

(2) After satisfactory completion of the tests prescribed in paragraph (a)(1) of this section, the distribution tubing